

Rain Barrels



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Rain Barrel Water- Questions and Answers

What is rainwater harvesting? Rainwater harvesting is merely a tool, like rain barrels, used to conserve water. This type of concept is not new. The larger version of a rain barrel, known as a cistern, holds several thousand gallons and has been used for centuries. Typical rain barrels come in 55-gallon or 65-gallon food grade drums. As our human population grows, water quality and water supplies are increasingly important issues in our time. Rain barrels are a simple way we can help the environment by:

- ◆ reducing non-point source water pollution
- ◆ reducing erosion from storm surges in our streams
- ◆ reducing the amount of treated city water used for watering lawns and gardens

How can I use rain barrel water? Use to water any type of plants. Rainwater is good for plants because it is highly oxygenated, free of salts and other minerals. As rainwater percolates into the soil, it washes salts away from root zones, allowing better root grow and making plants more drought tolerant. Infiltration of rainwater recharges groundwater resources as well. Remember rainwater does not contain chlorine and fluorine like municipal water so soil microorganisms and worms appreciate this! Rainwater is good for starting seeds, and filling hot tubs, bird baths, fountains and swimming pools. Rainwater is slightly acidic with a pH around 5.7. Azaleas, Blueberries, Camellias and Rhododendron like this acidic water. Other uses include: connect to a soaker hose (with the pressure-reducing washer removed); fill a watering can to hand-water plants, flowerbeds and gardens; keep your compost bin moist; rinse off gardening tools or wash your car.

What about using rain barrel water in fish ponds? These practices are not recommended. Rainwater from copper roofs contains lead. Rainwater from cedar shake roofs contains anti-microbial and wood preservatives. Asphalt roofs leach polyaromatic hydrocarbons and phthalate esters. The concentrations are small but no safety standards currently exist in the US.

How can biological contamination be prevented? Some contamination is inevitable. Bird droppings will be washed off the roof into the barrel. Bacteria and moss grow on cedar and asphalt roofs. Rain barrel water is not potable for these reasons. Plant debris that accumulates in the bottom of your rain barrel can support microbial growth. Clean out debris that settles to the bottom of your rain barrel at least once a year. This is a problem for humans, possibly fish, but not for your ornamental plants.

How do I prevent mosquitoes? Cover with screening and seal all openings to your rain barrel. Open access to standing water for more than four days allows mosquitoes to complete their lifecycle. Use “Mosquito Dunks” if needed.

What about algae? Algae need sunlight to grow. An dark-colored rain barrel will exclude the sunlight; paint clear barrels or cover to prevent growth.

How heavy is a full rain barrel? Water weighs 8.3 pounds per gallon. A full 55-gallon rain barrel can weigh over 450 pounds. Make sure the rain barrel foundation is level so that the barrel can not fall or roll over and hurt someone.

What about water overflow from my rain barrel? Protect your house foundation by diverting water overflow away from your house. Even better, pipe this water to another rain barrel or to a nearby thirsty flower bed!

What about using this water for emergency preparedness? This water can be used for washing clothes and bathing. Treat or boil rainwater, if needed, in emergencies for drinking or cooking. As mentioned above there are no safety standards for rainwater and there is some level of chemical and microbial contamination. <http://www.ces.ncsu.edu/disaster/handbook.pdf>

Any other suggestions? Let the rain wash your roof off before collecting the first rain of the season or after an extended dry period. This will reduce any soot from your fireplace or any air pollution that has settled on your roof. Drain your rain barrel in the winter so that it does not freeze and crack the barrel. Make sure rain barrel openings are secure to prevent drowning of small children or animals.

Calculating Water Runoff from a Roof:

A 1,000 square foot roof sheds 625 gallons in a 1" rainfall. So if your roof is 50 square feet, here's how to estimate the volume to expect from a 1" rainfall:

$$50 \times 0.625 = 31.25 \text{ gallons of rainwater from a 1" rainfall on your 50 sq-ft roof}$$

Average Inches of Rainfall per Month (Total average rainfall = 40 inches per year):

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Winston Salem	3.3 in	3.3 in	3.7 in	2.8 in	4.0 in	3.8 in	4.5 in	3.9 in	3.5 in	3.5 in	3.0 in	3.4 in
King	3.4 in	3.4 in	4.4 in	3.7 in	4.4 in	3.9 in	4.8 in	4.0 in	4.0 in	4.3 in	3.5 in	3.6 in

<http://countrystudies.us/united-states/weather/north-carolina/>

Parts List for Rain Barrel (hardware store)

- ◆ Plastic food grade barrel
- ◆ Three 3/4"x 1/2" PVC bushing – \$0.80 each
- ◆ One 1/2" brass hose bibb - \$5
- ◆ Two 3/4 to 1/2" brass hose adapter – \$3.50 each
- ◆ One Garden hose cap – 2 pack is \$2.60
- ◆ Garden hose - length you need for overflow
- ◆ Sealant - \$5 Ace Universal Thread Seal for PVC joints
- ◆ Pipe thread seal tape for brass joints
- ◆ Screening - 36"by 84" roll is \$6
- ◆ Bungee cord to attach screening to top of barrel
- ◆ Cement blocks to lift the barrel to the height you need for getting containers under the faucet. Make sure to level the foundation.

Optional - for larger overflow back to downspout also purchase 2x 3 inch adapter and flexible guttering.

Tools

Use a 15/16" spade bit to cut 3 holes:

- ◆ One hole 6-7" from bottom of barrel for faucet;
- ◆ One hole 3-4" down from the top for barrel overflow or to connect an additional barrel.
- ◆ One hole near the bottom for the brass hose adapter that can be used as clean out port.

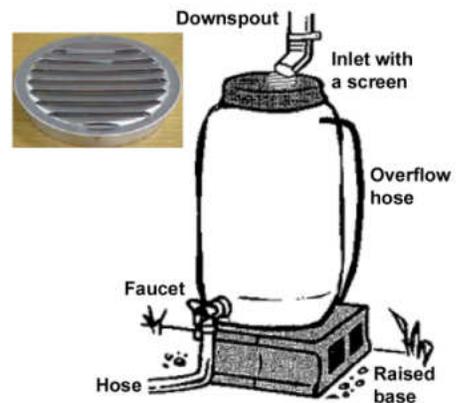
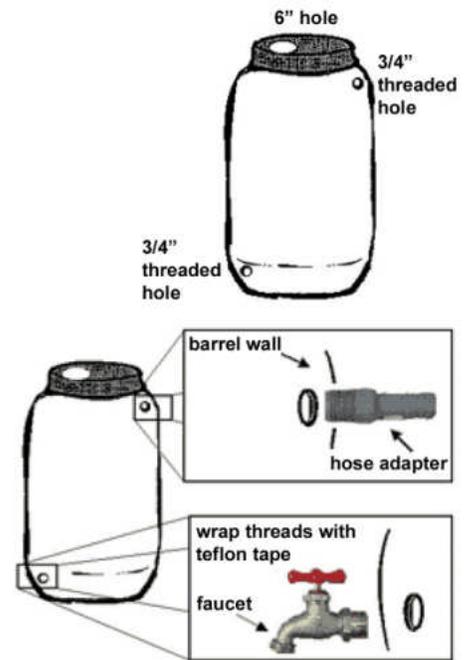
Jigsaw to cut opening in top

Sand paper to sand opening cut by jigsaw Scissors to cut mesh screening

Pipe wrench to tighten PVC bushings Measuring tape

Level

Additional: Purchase a gutter elbow, a Save the Rain Diverter, or a GWS Diverter, or other diverter. You will need a hacksaw for the installation on to your downspout.



Local sources (this is not a complete list):

Note: Complete = holes pre-cut and all or most rain barrel attachments. Incomplete = plastic drum, possibly no holes. Prices are subject to change.

Marco Container, 2425 Cragmore Road, Winston Salem, NC 27107

(336) 784-7413

55 gal drum ~\$55 or 275 gal tank ~\$200 incomplete

Custom Drum Services Inc, 2020 Jarrell Street, High Point, NC 27260

(336) 884-1082

55 gal drum ~\$15 incomplete

Shouses Surplus, 3557 Yadkinville Rd, Winston Salem, NC 27106-2534,

Phone: (336) 922-2222

Available from time to time; not sure of price.

Sandy Ridge Farmers Market \$60-70 complete

Guilford Co. Cooperative Extension (336-375-5876) ~\$100 complete

Check local industrial surplus dealers in your area or look in the yellow pages for drum and barrel or barrel and drum.

Local places to purchase cisterns or water collection tanks (for collecting larger amounts of water):

Farmer Feed and Seed

Tractor Supply

Blue Ridge Atlantic or BRAE, Oakboro, NC - <http://www.braewater.com/>

Rain Pro Inc, High Point NC - <http://www.rainpro.biz/>

Some Internet Sources for Purchase of Rain Barrels:

- ◆ Aaron's Rain Barrels, MA - www.ne-design.net
- ◆ Aquabarrel Rain Barrel, MD - www.aquabarrel.com
- ◆ Arid Solutions, NM - www.aridsolutionsinc.com
- ◆ Cypress Designs, WA - www.cypressdesigns.com
- ◆ EnviroYellowPages Drum and Barrel vendors - www.enviroyellowpages.com/listings/USA/NC/Barrels_-_Drums
- ◆ Gardeners Supply Company, VT - www.gardeners.com
- ◆ Gutterworks, IA - www.gutterworks.com
- ◆ The Green Culture, CA - www.watersavers.com
- ◆ Rain Barrel USA, Waxhaw, NC - www.rainbarrelusa.com
- ◆ Rainsaver Systems, TX - www.rainsaverusa.com
- ◆ U.S. Plastic, OH - www.usplastic.com

Various Instructions on Building Rain Barrels:

- ◆ http://manatee.ifas.ufl.edu/fyn/PDFs/How_to_Make-Rain_Barrel.pdf
(by Florida Cooperative Extension)
- ◆ http://www.cwp.org/Community_Watersheds/brochure.pdf
(by Center for Watershed Protection)
- ◆ <http://www.epa.gov/region3/p2/make-rainbarrel.pdf>
(by EPA)
- ◆ <http://www.townofcary.org/depts/pwdept/water/waterconservation/rainbarrelinstructions.pdf>
(by Town of Cary)
- ◆ <http://www.cityofbremerton.com/content/forms/MakeYourOwnRainBarrel.pdf>
(by City of Bremerton)
- ◆ http://www.mde.state.md.us/assets/document/water_cons/rainbarrel.pdf
(by Maryland Department of the Environment)
- ◆ <http://www.mrsc.org/GovDocs/B45RainBar.pdf> (by City of Bellingham)
- ◆ <http://www.dnr.state.md.us/ed/rainbarrel.html>
(by Maryland Environmental Design)

Additional Resources to treat stormwater runoff:

- <http://www.bae.ncsu.edu/topic/waterharvesting/>
- <http://www.bae.ncsu.edu/topic/bmp-temperature/>
- <http://www.bae.ncsu.edu/topic/raingarden/>
- <http://www.bae.ncsu.edu/topic/bioretention/>
- <http://www.bae.ncsu.edu/stormwater/PublicationFiles/SWwetlands2000.pdf>
- <http://www.bae.ncsu.edu/greenroofs/>

Soil and Water Conservation District

A resource for offsetting the costs of best management practices (75% cost share). Contact your local County Soil and Water Conservation District office.



A small cistern

**This information compiled by Wendi Hartup
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